

Date: 2000-03-07

TEST REPORT

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No.: WM100323

APPLICANT: (Code : JOM002)

JOHN MANUFACTURING LIMITED.

45 HOI YUEN ROAD, 6/F, YAU LEE CENTRE, KWUN TONG, KOWLOON, HONG KONG.

DATE OF SAMPLES RECEIVED: 2000.02.25

DATE OF TESTING: 2000.03.01 to 2000.03.07

DESCRIPTION OF SAMPLE(S):

A sample of product said to be:

Product: MINIATURE LANTERN WITH WEATHER RADIO

Manufacturer: JOHN MANUFACTURING LIMITED.

Band Combination: WEATHER RADIO

Model Number: JML 9912WA

Brand Name: JOHNLITE

Rating: 6Vd.c. ("AA" size battery × 4), with jack

Origin : CHINA

The AC/DC Adaptor was used for the tests was a Winstar NA1535 Universal adaptor.

INVESTIGATIONS REQUESTED:

Measurement to the relevant clauses of F.C.C. Rules and Regulations Part 15 Subpart B - Unintentional Radiators.

RESULT/ REMARK: Please see attached sheet(s).

CONCLUSION:

From the measurement data obtained, the tested sample was considered to have COMPLIED with the requirement for the relevant clauses of Federal Communication Commission Rules for Radio Receivers.

TEST EQUIPMENT AUDIT: Please see Appendix A

Law Man Kit
Testing Engineer

Kitty Choy
Verify by

Patrick Wong
Patrick Wong
for Managing Director

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TEST SUMMARY

(A) Measurement of Radiated Emissions

Result -- Satisfactory

Data -- See the attached data

(B) Measurement of Line-Conducted Voltage

Result -- Satisfactory

Data -- (The spectrum was checked from 450KHz to 30MHz. All emissions were too low to be measurable and they were all more than 20dB below the permitted limit.)

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WEATHER BAND RADIO RECEIVER

(A) Measurement of Radiated Interference

TEST REFERENCE: FCC Rules Part 15 Subpart B section 15.109

TEST CONDITION : Weather Band Receiver

TEST DATE : 2000.03.07

Channel 1

Freq. to which tuned	Polarity	Meter Reading (including Antenna Factor) at 3m	Field Strength (at 3m)	FCC Limit @
MHz		dB(μV/m)	μV/m	μV/m
162.400	Vertical	36.3	65.3	150
324.800	Vertical	<1.0	<1.1	200
487.200	Horizontal	36.6	67.6	200

Channel 2

Freq. to which tuned	Polarity	Meter Reading (including Antenna Factor) at 3m	Field Strength (at 3m)	FCC Limit @
MHz		dB(μV/m)	μV/m	μV/m
162.425	Vertical	36.2	64.6	150
324.850	Vertical	<1.0	<1.1	200
487.275	Horizontal	36.6	67.6	200

Channel 3

Freq. to which tuned	Polarity	Meter Reading (including Antenna Factor) at 3m	Field Strength (at 3m)	FCC Limit @
MHz		dB(μV/m)	μV/m	μV/m
162.450	Vertical	35.5	59.6	150
324.900	Vertical	<1.0	<1.1	200
487.350	Horizontal	36.5	66.8	200

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Channel 4

Freq. to which tuned	Polarity	Meter Reading (including Antenna Factor) at 3m	Field Strength (at 3m)	FCC Limit @
MHz		dB(μV/m)	μV/m	μV/m
162.475	Vertical	35.6	60.3	150
324.950	Vertical	<1.0	<1.1	200
487.425	Horizontal	36.2	64.6	200

Channel 5

Freq. to which tuned	Polarity	Meter Reading (including Antenna Factor) at 3m	Field Strength (at 3m)	FCC Limit @
MHz		dB(μV/m)	μV/m	μV/m
162.500	Vertical	35.5	59.6	150
325.000	Vertical	<1.0	<1.1	200
487.500	Horizontal	35.6	60.3	200

Channel 6

Freq. to which tuned	Polarity	Meter Reading (including Antenna Factor) at 3m	Field Strength (at 3m)	FCC Limit @
MHz		dB(μV/m)	μV/m	μV/m
162.325	Vertical	34.1	50.7	150
325.050	Vertical	<1.0	<1.1	200
487.580	Horizontal	33.4	46.8	200

Channel 7

Freq. to which tuned	Polarity	Meter Reading (including Antenna Factor) at 3m	Field Strength (at 3m)	FCC Limit @
MHz		dB(μV/m)	μV/m	μV/m
162.550	Vertical	34.1	50.7	150
325.100	Vertical	<1.0	<1.1	200
487.650	Horizontal	32.7	43.2	200

=====SUMMARY=====

All Data is within limit

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Broad-band Antennas were used

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NOTES FOR THE RADIATION MEASUREMENT

- (1) Test site facility:
Open field test site located at Taipo (Hong Kong) with a metal ground plane on filed with the FCC pursuant to section 15.109 of the FCC rules.
- (2) Distance between the EUT and measuring antenna:
3 meters.
- (3) Measuring instrumentations:
CISPR Quasi-peak type field strength meter (25MHz - 1000MHz) 6 dB bandwidth set at 120KHz.
- (4) Measuring antenna:
Broad band antenna for the frequency range 25 - 1000 MHz, connected with 10 meters coaxial cable. Cable loss of the coaxial cable included in the Antenna Factor for measurement data. The antenna are capable of measuring both horizontal and vertical polarization.
- (5) Frequency range scanned:
The frequency range from 25 MHz to 1000 MHz had been searched. Readings of the highest emissions relating to the limit were reported as above.
- (6) Arrangement of EUT:
During the test, the sample was operated at rated supply voltage and arranged for maximum emissions.
- (7) Measuring Procedure:
In accordance with the relevant sections of ANSI C63.4:1992.
- (8) Measuring Uncertainty:
The calculated uncertainty for measurement performed at 3M test distance are:-
30MHz to 300MHz = $\pm 3.7\text{dB}$, 300MHz to 1000MHz = $+ 3.0\text{dB}/-2.7\text{dB}$.

NOTES FOR THE CONDUCTED POWER-LINE MEASUREMENT

- (1) LISN (Line Impedance Stabilization Network) used :
50 μ H LISN in accordance with Section of ANSI C63.4:1992.
- (2) Measurement Instrumentations:
CISPR quasi-peak type radio noise meter (9 KHz - 30 MHz), 6 dB bandwidth set at 9 KHz for measurement between 150 KHz & 30mhz.
- (3) Frequency range scanned :
The frequency range form 450 KHz to 30 MHz had been searched. Reading of the highest emissions relating to the limit were reported as above.
- (4) Configuration of EUT:
Connection of equipment and operation conditions were same as those in the Radiation measurement.
- (5) Measurement procedure :
In accordance with the relevant sections of ANSI C63.4:1992 "FCC Methods of measurement of Radio Noise Emissions from Computing Devices".
- (6) Measuring Uncertainty:
The calculated uncertainty for conducted power-line measurement is = ± 2.3 dB.

Remark: Purpose of this test is to provide the Applicant with the necessary test data of their device for the submission to FCC with application for Equipment Authorization under FCC's Equipment Authorization Program. This test itself is not an Approval Test.

*** End of Document ***

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TEST EQUIPMENT AUDIT

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL.
EM007	SPECTRUM ANALYZER	HEWLETT PACKARD	HP85660B	3144A21192	11/06/99
EM008	SPECTRUM ANALYZER DISPLAY	HEWLETT PACKARD	HP85662A	3144A20514	11/06/99
EM009	QUASI PEAK ADAPTOR	HEWLETT PACKARD	HP85650A	3303A01702	11/06/99
EM010	RF PRESELECTOR	HEWLETT PACKARD	HP85685A	3221A01410	11/06/99
EM011	ATTENUATOR/SWITCH	HEWLETT PACKARD	HP11713A	2508A10595	11/06/99
EM012	PRE-AMPLIFIER	HEWLETT PACKARD	HP8449B	3008A00262	11/06/99
EM013	CONTROLLER (COMPUTER), COLOR MONITOR, KEYBOARD & MOUSE FLOPPY DRIVE	HEWLETT PACKARD HEWLETT PACKARD HEWLETT PACKARD	HP9000 HP A1097C HP9133L	6226A60314 3151J39517 2623A02468	CM
EM017	ANTENNA	ARA INC.	LPB-2513/A	1069	17/02/00
EM072	SIGNAL GENERATOR	HEWLETT PACKARD	8640B	1948A11892	30/03/98
EM083	HKSTC OPEN AREA TEST SITE	HKSTC	N/A	N/A	25/02/99
EM145	EMI TEST RECEIVER	R & S	ESCS 30	830245/021	10/05/99

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Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL
EM078	VARIAC	SHANGHAI VOLTAGE	TDGC-3/0.5	N/A	CM
EM081	SMALL SCREENED ROOM	MIKO INST HK	N/A	N/A	09/09/99
EM119	LISN	R & S	ESH3-Z5	0831.5518.52	09/08/98
EM120	EMI TEST RECEIVER	R&S	ESHS10	1004.0401.10	09/08/99
EM123	NOTEBOOK PC	ACER	350CX	P007865	N/A
EM127	ISOLATION TRANSFORMER 220 TO 300	WING SUN	N/A	N/A	01/09/97
EM142	PLUSE LIMITER	R & S	ESH3Z2	357.8810.52	29/01/99
EM145	EMI TEST RECEIVER	R & S	ESCS 30	830245/021	10/05/99

Remarks:-

CM Corrective Maintenance

N/A Not Applicable or Not Available

TBD To Be Determined